1 Course Personnel

Instructor: Jason O’Kane (jokane@cse.sc.edu)
Teaching assistant: Trevor Olsen (tvolsen@math.sc.edu)

2 Webpage

Information about the course, including scheduling information, assignments, and announcements, will be posted at this site:

https://cse.sc.edu/~jokane/teaching/750

3 Course format

In person lectures will be held on Tuesdays and Thursdays, from 11:40 until 12:55am in Innova 1400. The lectures will also be recorded and made available electronically. The university lists three distinct sections for this course (001, 002, J60). There will be no meaningful difference between these three sections.

4 Office Hours

<table>
<thead>
<tr>
<th>When?</th>
<th>Where?</th>
<th>Who?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mondays, 11:30–1:00</td>
<td>electronic</td>
<td>Olsen</td>
</tr>
<tr>
<td>Tuesdays, 3:00–4:30</td>
<td>Innova 2229</td>
<td>O’Kane</td>
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<tr>
<td>Wednesdays, 11:30–1:00</td>
<td>electronic</td>
<td>Olsen</td>
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<tr>
<td>Thursdays, 3:00–4:30</td>
<td>Innova 2229</td>
<td>O’Kane</td>
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You may also stop by my office at other times—I am often, but not always, around and available to help—or make an appointment using the site linked from the course webpage.

5 Description

Official description Algorithm design techniques; algorithms and data structures for sets and graphs; time and space complexity; sorting and searching; NP-complete problems.

Content The course emphasizes methods for analyzing algorithms. It includes a selection of specific algorithms that solve important problems, illustrate recurring algorithm design techniques, or both, along with an introduction to a set of tools, including the theory of NP-completeness, for establishing the hardness of algorithmic problems.
6 Prerequisites

CSCE350 (Data Structures and Algorithms) or an equivalent undergraduate-level course on algorithms and data structures. I will refer to and build upon this background material throughout the semester.

7 Textbook

Required  T. H. Cormen, C. E. Leiserson, R. L. Rivest and C. Stein, *Introduction to Algorithms*, third edition, MIT Press/McGraw-Hill, 2009.  *(We will cover a substantial fraction the material in this book, which is considered to be a standard reference for algorithms. Homework problems will be assigned from it.)*

Recommended  M. R. Garey and D. S. Johnson, *Computers and Intractability: A Guide to the Theory of NP-Completeness*, Freeman, 1979.  *(This is the definitive book on NP-completeness, which we will cover in the final part of the semester. The book has remained remarkably relevant and accessible in the 41 years since its original publication.)*

8 Evaluation and Grading

Your learning in this course will be evaluated based on the following measurements.

- Seven homework assignments, worth 10 points each. Homework grading will be based on a significant good faith attempt to solve the assignment problems correctly. In lieu of submitting solutions on paper, you should use the form linked from the course website to confirm that you have completed each assignment. Earning full credit for the homework requires making a significant good faith attempt to solve each problem. Late submissions cannot be accepted.

- Seven in-class quizzes, worth 40 points each. Dates for each quiz are listed on the course website. Students that plan to take one or more of the quizzes outside of the in-person class meetings should contact the instructor as soon as possible; these quizzes will generally need to be taken at the same time as they are administered on campus.

- A final exam, on December 8, worth 200 points. This exam will be conducted remotely for all students. Details will be announced later in the semester.

Thus, a total of 550 points will be available through the semester.
If your total score is $x$ points, then your final grade will be $g(x)$, as defined below:

$$
g(x) = \begin{cases} 
  A & \text{if } x \geq 495 \\
  B+ & \text{if } 467 \leq x < 495 \\
  B & \text{if } 440 \leq x < 467 \\
  C+ & \text{if } 412 \leq x < 440 \\
  C & \text{if } 385 \leq x < 412 \\
  D+ & \text{if } 357 \leq x < 385 \\
  D & \text{if } 330 \leq x < 357 \\
  F & \text{if } x < 330 
\end{cases}
$$

**Gradebook access** Grades will be posted on the CSE moodle server:

https://dropbox.cse.sc.edu

It is your responsibility to verify that grades are correctly recorded on this site.

**Corrections and regrades** My goal is to ensure that all of the grading for this course is fair and correct. If you believe there’s been a mistake in grading, please bring it to the instructor’s attention in office hours within one week after the scores are posted. Regrade requests after one week will be politely declined.

**Important reminder** Keep in mind that I am grading your work, not you as a person.

**Deviations from the grading policy** I assume that every student takes the class intending to succeed, and I share that goal. However, in the interest of fairness and consistency, requests for grade increases that are inconsistent with the stated grading scale will be politely declined. Here is an incomplete list of hypothetical requests from students that are *not sufficient* reasons to deviate from the stated grading scale:

- I need a GPA of at least ____ to get the internship I want.
- My parents will be disappointed in me.
- If my grade is less than ____, I won’t be able to graduate.
- I’ve never gotten a grade as low as ____ before.
- Getting a grade lower than ____ makes me feel sad.
- I have too many other responsibilities.
- The course is too hard for me.
- I am about to graduate.
- I have a good GPA so far.
- I have never failed a class before.
- I am willing to do extra work.
- I am really close to getting a ____.
- I want to get into graduate school.

9 **Policies**

**Attendance** The instructor will not keep detailed records of class attendance. However, your instructor will make every effort to ensure that class attendance is worth your time. Missed quizzes due to unexcused absences will result in a score of zero.
**Cheating**  Academic dishonesty undermines the educational mission of the course and reflects disrespect to your classmates and to your instructor. Therefore, you are expected to practice the highest possible standards of academic integrity. The academic penalty for cheating is a failing grade for the course. This policy includes all forms of academic misrepresentation. Details on university’s academic integrity policies are available at

http://sc.edu/academicintegrity

**Collaboration**  For the homework assignments, it is permissible to discuss the problems at a high level with your classmates, but you should work out the details and compose the complete answers independently. Submission of identical or substantially identical work will be considered strong evidence that cheating has occurred. The quizzes and final exams must be completed fully independently.

**Late assignments**  Homework assignments cannot be accepted late, because solutions will be posted shortly after the deadline.

**Mobile devices**  Please silence any mobile devices before coming to class. If your phone rings in class, I reserve the right to answer it for you and take a message. Likewise, if my phone rings during class time, I will allow a student to answer it.

**Accommodations for disabilities**  The instructor is happy to ensure that that class is fully accessible to students with disabilities. Any student with a documented disability should contact the Student Disability Resource Center to make arrangements for appropriate accommodations.

**Policy changes**  As you already know, this semester presents a larger degree of uncertainty, along several dimensions, than usual. As a result, changes to the syllabus at the instructor’s reasonable discretion, including changes to course schedule or to the evaluation and grading mechanisms, are possible.